

WHAT IS CLAIMED IS:

1. A method of protecting normal cells from radiation damage, the method comprising:
 - contacting said normal cells with a dose of a hyperpolarizing agent effective to hyperpolarize the cell membrane ;
 - wherein said normal cells are protected from radiation damage.
2. The method according to Claim 1, wherein said contacting is performed prior to radiation exposure.
3. The method according to Claim 1, wherein said contacting is performed immediately after radiation exposure.
4. The method according to Claim 1, wherein said radiation is ionizing radiation.
5. The method according to Claim 4, wherein said ionizing radiation results from nuclear fission or fusion.
6. The method according to Claim 4, wherein said ionizing radiation is X-rays.
7. The method according to Claim 1, wherein said hyperpolarizing agent is a potassium channel opener.
8. The method according to Claim 7, wherein said potassium channel is the KATP channel.
9. A method for identifying an agent as radioprotective agent, comprising:
 - combining a candidate agent with a cell;
 - measuring polarization of the cell membrane;
 - wherein an agent that hyperpolarizes said cell membrane, provides for protection against radiation damage in normal cells.

10. The method according to Claim 9, wherein said changes are measured by calcium flux.
11. The method according to Claim 9, wherein said changes are measured by patch clamping.